WATER-EFFICIENT PRODUCT MARKET ENHANCEMENT PROGRAM STAKEHOLDER MEETING

Hotel Washington
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Meeting Summary

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1. INTRODUCTION

This country faces both water infrastructure and water supply problems. If investment in water and wastewater infrastructure does not increase, the gap between needs and investments over the next 20 years will potentially be $224 billion. Just as important, 36 states expect to experience water shortages over the next ten years, even without drought conditions. To address this critical issue, EPA is planning a national program to promote water-efficient products to consumers. One of the tools under consideration is a water-efficient product labeling program that is based on EPA's highly successful ENERGY STAR® program, a government-backed program to protect the environment through superior energy efficiency. As a first step toward assessing the needs of a water-efficient product market enhancement program, the Agency is conducting a series of stakeholder meetings to work toward possible approaches and partnership opportunities to promote water efficient products. The October 9, 2003 meeting in Washington, DC was the first of the stakeholder meetings.

The remainder of this report summarizes the presentations and facilitated discussions that occurred at the October 9, 2003 meeting and is organized as follows:

Section 2: EPA's opening remarks;
Section 3: Panel discussion: state, local, and public perspective;
Section 4: Facilitated discussion: goals and market opportunities;
Section 5: Panel discussion: working programs and international perspectives;
Section 6: Facilitated discussion: program approaches and green marketing;
Section 7: Panel discussion: manufacturers' and retailers' perspective;
Section 8: Facilitated discussion: products of interest and building partnrerships; and
Section 9: EPA's closing remarks.

Copies of background information, press releases, speeches, presentations, brief biographies of the panelists, and a list of the attendees can be found on EPA's water-efficiency web site at http://www.epa.gov/water/water_efficiency.html.

2. EPA'S OPENING REMARKS

Welcome: Jim Hanlon, U.S. EPA, Director, Office of Wastewater Management

Jim Hanlon opened the meeting by welcoming guests and panelists to this first stakeholder meeting concerning water-efficient product labeling. Mr. Hanlon extended an especially warm welcome to the international guests from Australia and Canada. He then noted a special welcome to Edward Osann, representing Friends of the Earth, and Al Dietemann, from Seattle Public Utilities, who helped assemble a diverse list of 117 stakeholder groups who support an EPA water-efficient product labeling program.

Mr. Hanlon indicated that clean and safe water is one of our nation's top priorities and believes that this country can and should be a leader in water efficiency. He described the water-efficient product market enhancement program as a major step toward partnerships with

manufacturers, retailers, water and wastewater systems, municipalities, states, consumer organizations, and environmental groups, with the goal of greater water efficiency through market-based approaches. By assembling panelists who represent a broad range of perspectives and experiences, Mr. Hanlon believes that this meeting will serve as both an informational meeting and an opportunity to generate and gather ideas.

Mr. Hanlon then introduced G. Tracy Mehan, III, who is the U.S. EPA Assistant Administrator for Water and a staunch advocate for water efficiency.

Opening Remarks: G. Tracy Mehan, III, U.S. EPA Assistant Administrator for Water

Mr. Mehan began his opening remarks by welcoming everyone to the meeting and enthusiastically spoke of the future of a sustainable water infrastructure. He described the growing concern about the current inadequate state of water infrastructure in the United States. To meet the challenges of our aging infrastructure, Mr. Mehan and EPA suggest four pillars of a sustainable water infrastructure that include:

- Better management to improve performance and reduce costs;
- Full cost pricing and conservation pricing to help reduce peak water use;
- Using a watershed approach involving stakeholders in coordinated management to meet water quality standards; and
- Using water more efficiently.

Mr. Mehan informed the participants that EPA's proposed program to bolster the market for water-efficient products stems from the need to address sustainable infrastructure problems. It is one of a number of EPA water-efficiency programs and policies designed to help states, water systems, and wastewater facilities meet the infrastructure challenges of the future. In addition to this program, EPA recently clarified the eligibility of water-efficiency measures under the Clean Water and Drinking Water State Revolving Fund Programs and proposed a change to the regulatory policy for apartment buildings to encourage them to submeter apartments and bill tenants separately for water.

Mr. Mehan emphasized that water demand must be managed and that we must begin to think in a more integrated fashion about water management. As a demonstration of this he cited the "20% Club" in the Water Conservation Division of the American Water Works Association. The club is comprised of water system representatives that have achieved at least a 20 percent reduction in per capita water use. Seattle Public Utilities is a member of this club and couples equipment rebate programs with a seasonally adjusted, increasing block rate structure, putting them in the forefront of using price signals to promote water conservation. They believe that 20 percent is not the upper bound and even more water can be cost-effectively saved.

Mr. Mehan stated that EPA has done enough investigation to determine that there is a strong potential to save significant amounts of water and energy through labeling or other market enhancement approaches such as voluntary standards and design competitions. EPA's proposed

national market enhancement program for water-efficient products aims to increase water efficiency by:

- Helping consumers identify and understand the many advantages of water-efficient products for residential or commercial use;
- Motivating manufacturers to produce more competitive water-efficient products; and
- Encouraging and helping distributors, retailers, and local water utilities to promote these products.

Mr. Mehan indicated that the type of products the Agency would consider evaluating include plumbing products, appliances, landscape irrigation devices, commercial kitchen equipment, and other products for commercial use. EPA will proceed carefully in areas where there are clear benefits above and beyond those from activities already under way, such as the ENERGY STAR program or national plumbing product standards. If EPA's proposed program achieves its objectives, Mr. Mehan believes the nation will reap the multiple benefits of efficient water use, infrastructure cost reduction, water supply preservation, energy use reduction, and aquatic habitat protection.

3. PANEL DISCUSSION: STATE, LOCAL, AND PUBLIC PERSPECTIVE

The first panel discussion provided some state, local, and public perspective views of water-efficient product market enhancement and consisted of four presentations by panelists representing state water conservation groups, local municipalities, environmental groups, and water conservation technology firms.

Water-Efficient Product Labeling

Mary Ann Dickinson, California Urban Water Conservation Council
John Koeller, Koeller and Company

Mary Ann Dickinson, Executive Director of the California Urban Water Conservation Council (CUWCC), and John Koeller, Principal of Koeller and Company, opened the discussion with a joint presentation titled "Water-Efficient Product Labeling." CUWCC is a non-profit organization composed of over 300 urban water supply agencies, environmental groups, and other entities interested in statewide water conservation in California. Koeller and Company is a firm that specializes in the field of water conservation technologies, equipment, and programs for the water industry in North America.

Ms. Dickinson began by describing California's interest in water-efficient product labeling. In California, there are over 200 water utilities currently participating in water conservation programs, with $90 million being spent annually on the programs. She also spoke of laws, regulations, and super-efficient rebates needed to achieve the goal of water-efficiency.

Energy efficient products currently have a highly successful labeling program implemented within the appliances sector of the retail market. Ms. Dickinson mentioned the specific need for more water-efficient products to be produced by manufacturers, as well as an effective message corresponding with these products that consumers can easily identify, such as labeling. Furthermore, Ms. Dickinson maintains that current investments are being made towards water-efficient products that were not happening until recently.

To draw attention to consumer interest, Ms. Dickinson explained that, to date, 2.3 million rebates on high-efficient toilets and 200,000 rebates for high-efficient clothes washers have been granted, and a new program is in the works for a rebate system to be put in place for water-efficient irrigation controllers. Ms. Dickinson spoke of CUWCC's keen interest to promote consumer awareness of key water conservation efforts. In an effort to achieve consumer awareness, CUWCC has used strategies such as the "Flex Your Power" energy campaign, market transformation strategies, and optimizing utility investments.

To further convey California's strong interest in the development of water-efficient product labeling, Ms. Dickinson stated that CUWCC began investigations and proposals before the year 2000. Between the years 2000 through 2003 proposals for funding and a movement toward labeling began in California.

The rest of the presentation on Water-Efficient Product Labeling was then handed over to John Koeller. Mr. Koeller highlighted specific guidelines he felt would be appropriate if a national water-efficient labeling system were put into place on retail market shelves. These guidelines included: measurable savings both field-demonstrated and sustainable, labeling that differentiates among products in the market place, and a tiered rating system to reflect variability.

Mr. Koeller placed emphasis on the residential and commercial sectors of water consumption and stated that the commercial sector has a huge untapped potential for water efficiency. Priority areas identified by Mr. Koeller for residential water conservation included: clothes washers, dishwashers, plumbing fixtures and devices, hot water delivery systems, humidifiers, swimming pool accessories, and gray water systems. Priority areas in the commercial sector included: food services (commercial dishwashers, food steamers, pre-rinse spray valves, ice machines, and cooling systems), medical services (x-ray film processors, steam sterilizers, plumbing fixtures and devices, laundry equipment, and cooling systems), and other areas such as irrigation controls and systems, wet cleaning equipment, gray water/recycling systems, car wash systems, commercial laundering equipment, water treatment systems, water-based sweeping equipment, and plumbing fixtures and devices.

Looking to the future of water-efficient product labeling, a coalition of water providers is planning to hold a progress meeting in Austin, Texas in January of 2004. Mr. Koeller indicated that they would like to see continued coalition building and program development among manufacturers, builders, and stakeholders over the next two years with continued phased implementation of the California water conservation program by 2006 and beyond. Mr. Koeller

indicated that California is glad to hear about EPA's proposed program and encourages uniform progressive program development across the country.

Water-Efficiency Certification Program
Richard Harris, East Bay Municipal Utility District

Mr. Harris, Manager of Water Conservation of the East Bay Municipal Utility District (EBMUD) gave the second presentation of the day. His presentation focused on the implementation of a water-efficiency certification program and the steps needed to develop a product labeling program. EBMUD's experience with water conservation includes the development and implementation of a Water Conservation Master Plan. To date this plan has helped save 12.5 million gallons per day and is expected to save over 35 million gallons per day of water by the year 2020. Mr. Harris indicated that a significant public investment has been put into this plan which includes a $5 million annual budget, $40 million expended since the 1970's, and over $120 million expected to be invested by 2020.

The presentation then shifted to the topic of water-efficiency certification, with a number of ideas to support such a measure. Mr. Harris explained the market transformation that is under way and the need to advance water use efficiency products and best management practices. Mr. Harris maintains that a certification system for water efficient products would promote cost-effectiveness by increasing the return of investment on water conservation. Branding or labeling was another benefit that EBMUD found in implementing a water-efficiency program. Mr. Harris mentioned that recognition and rewarding of customers and new applicants for their conservation and recycling efforts is a vital part of a water-efficiency program. Mr. Harris also pointed out that support has been displayed for current efficiency programs, such as ENERGY STAR and Green Business, and believes the same kind of support would be given to a program for water-efficient products.

As part of an effort to implement a water-efficiency certification program, an institution must measure its progress and potential. Mr. Harris identified four key reasons why EBMUD measures its water conservation efforts. Those four reasons include the need to: track how they are doing; project remaining potential; identify where potential exists; and know which programs can most effectively achieve their potential. Furthermore, Mr. Harris maintains that a successful water conservation program must understand customer demographics and behaviors, demand hardening or softening impacts, and external influences such as the weather. Mr. Harris also believes that a successful program must develop data collection standards, product performance and durability tests, monitoring and evaluation protocols, and water consumption patterns and records.

Responses to a 2001 customer survey developed by EBMUD indicate that the primary reasons why consumers want to conserve water are to save money (57 percent), prevent shortages (24 percent), and protect the environment (14 percent). Mr. Harris believes that these results indicate that businesses should consider the use of rebates as an incentive for customers to purchase water-efficient products. This survey also indicates that 60 percent of single-family respondents thought they used less than 50 gallons per day of water per household when in

reality they use an average of 228 to 480 gallons per day per household. Therefore, Mr. Harris believes that people may not be getting the message on how much water they use on a daily basis.

Mr. Harris proceeded to explain that EBMUD formed the Demand Management Advisory Committee (DMAC) to increase awareness in the community to save water, review program allocation for cost-effectiveness, and identify new, cutting-edge water savings approaches and partnerships. Committee members include representatives of the business community, environmentalists, local government, landscape industry, taxpayer groups, and homeowners. DMAC has also conducted a 14-month review of the water use efficiency program and developed three major recommendations to further increase water-efficient product usage among consumers. DMAC's first recommendation is for EBMUD to target conservation education and public relations by expanding market plan and product labeling, advocating for wholesaler/retailer point-of-sale displays, and holding "white tent" product demonstration events. The second recommendation is to educate and provide incentives to sales staff so that they can provide water-efficient product information to the consumer. DMAC's third recommendation is to update the list of water-efficient appliances. Product testing could be district-sponsored, much like it is with ENERGY STAR and the Consortium for Energy Efficiency.

In an effort to further expand the water-efficient products market, EBMUD is currently conducting a focus group as part of their 2003 marketing plan. The focus group is targeting both residential and business customers. Among residential customers there has been a strong support for a "WaterStar" program that labels water-efficient hardware and appliances for easy identification. "WaterStar" would be a natural compliment to the successful ENERGY STAR program. The focus group also found that residential customers were not necessarily swayed to purchase a home solely based on a "WaterStar" seal of approval. Business customers, when surveyed, consider themselves to be proactive in water conservation, believe that "green" or "water-efficient" labeling is a plus, and would like to see the development of a "WaterStar" seal of approval for their businesses.

Drawing information from the focus groups, EBMUD has developed three recommendations for their 2003 marketing plan. The first recommendation is to develop a "WaterStar" certification program to evaluate water-efficient practices of businesses and reward those meeting specified criteria with a "WaterStar" seal of approval. Second, develop a "WaterStar" rebate program for the purchase of more water-efficient appliances and hardware. The final recommendation is to partner with manufacturers and retailers on product availability and an advertising campaign to launch the "WaterStar" program.

Delving further into the concept of a water-efficiency certification, EBMUD has developed a two track "conceptual" approach. The first is a WaterSmart™ certification and recognition program for businesses and institutions to implement best management practices. The second track is a WaterStar™ rating and labeling program to advance best available technology and more water-efficient products. As part of the WaterSmart™ certification process both new water service applicants and existing customers could participate in the program. For new water service applicants the certification services would consist of an environmental review,

a landscape plan review, information sharing, water demand calculations/meter sizing, and adherence to EBMUD water service regulations. In the case of exiting customers, certification services would include water audits, incentives, and educational workshops. Current customers would also receive water use survey "thank you letters," landscape water budget "goal met certificates," achievement awards, and drought awareness program certificates.

Currently, for businesses to achieve a "Green Business" certification from EBMUD the following water use efficiency steps must be implemented: conduct a water use survey; review water bills; learn how to read a water meter; check and repair all leaks; install efficient aerators, showerheads, and hose nozzles; test irrigation systems; and implement three additional water conservation measures of their choice. Mr. Harris emphasized that the Green Business Certification program is not yet strong enough, but shows great potential for improvement.

Mr. Harris believes that more focus is needed in emerging technologies in the food service and hospitality sector and the health care/medical sector. The food service and hospitality sector's emerging technological advances that need more focus include: self-contained (connectionless) food steamers, commercial dishwashers, air-cooled ice cream machines, and air-cooled ice machines. In the health care/medical sector, Mr. Harris believes improvements can be made to x-ray film and photo processing and steam sterilizers. Other general application technologies that should receive future focus include self-adjusting irrigation controllers, appliance (point of use) metering, hot water on demand systems, and car washing.

Mr. Harris concluded his presentation by highlighting the values and benefits of water-efficient product labeling. He stated that product labeling values are quality, product safety, consumer trust, sponsor integrity, excellent customer service and support, and long-term solutions. Benefits for labeling include creating the demand for/branding of hardware, enhancing durability of water savings, helping meet customers' practical needs, better targeting of incentives and education/outreach, improving conservation program cost-effectiveness, and creating a triple bottom line approach.

Water-Efficient Products and Product Labeling: New Initiatives for Efficient Water Use

Edward R. Osann, Friends of the Earth

Mr. Edward Osann of Friends of the Earth (FOE) and President of Potomac Resources Inc. gave the third presentation of the day. His focus was on taking the initiative for water efficiency. Mr. Osann began his presentation by describing the latest water-efficiency campaign taking place in Seattle, Washington. Seattle has been considering a water-efficient product labeling program for the last two years and in February 2003, the concept was endorsed by the Water Conservation Division of the American Water Works Association (AWWA). In March, the City of Seattle joined with Friends of the Earth to invite nationwide support for water-efficient product labeling. Then, in April 2003 a joint letter from Seattle Mayor Greg Nickels and FOE President Brent Blackwelder was issued with a simple proposition: consumers should be able to identify the most water-efficient products that meet their needs. The letter also invited utilities, manufacturers, and non-profit organizations to endorse a Position Statement on

Water-Efficient Product Labeling. A copy of this position statement is available on EPA's water-efficiency web site.

Mr. Osann believes that many people do not really understand the actual needs for water-efficient products and labeling because they think the reasons are obvious. In fact, specifying the needs are important because not all needs are obvious. The Position Statement identifies the compelling environmental needs and fiscal and economic concerns associated with water efficiency:

> "Maintaining healthy aquatic ecosystems depends on adequate water remaining in springs, rivers, lakes, and estuaries; even as we supply our communities with safe and affordable drinking water. The importance of water efficiency will expand as our increasing population and economic growth place additional burdens on limited supplies of water."
>
> "Water consumption is an important factor in determining the timing and sizing of both water and wastewater capital improvements, and more efficient use of water can help moderate these costs. The nationwide breadth of our multi-billion dollar infrastructure needs, as well as the application of federal funds to meeting these needs, combine to make water efficiency an important national objective."

In a submission to EPA on July 22, 2003, FOE requested that EPA establish a water-efficiency labeling program in cooperation with manufacturers and distributors of water using appliances, plumbing products, cooling systems, irrigation devices, landscape materials, and other commonly sold products that use water. They also requested that EPA obtain stakeholder input from agencies, organizations, and companies on label name, logo design, product selection, efficiency criteria, and other program details. Furthermore, FOE requested that this proposal be considered for funding in the President's budget for FY 2005.

Mr. Osann stated that currently, there is a list of over 115 endorsers supporting a water-efficient product labeling initiative, of which 22 are manufacturers and consulting companies, 18 are environmental and civic organizations, and 76 are state and local agencies, utilities, and utility associations. Mr. Osann emphasized that the list of endorsers is an open document and any group is welcome to join the list.

Among the current list of endorsers of the Position Statement, 20 groups have stepped forward to form a steering committee on this issue. According to Mr. Osann, the steering committee will work with EPA during the formative period of its efficiency program development. The committee will also develop recommendations for early consideration in establishing a water-efficient product program.

Mr. Osann continued his presentation by discussing recommendations for a national program to promote water-efficient products, put forth by FOE. Mr. Osann believes that through existing law, such as the Clean Water Act, EPA can progress further with a water-efficient products initiative. The eight recommendations are as follows:

1. EPA should pursue water-efficient product labeling as one of several complementary strategies that promote greater end-use efficiency of water.
2. EPA should establish a water-efficiency research program to determine the full range of costs and benefits for water-efficiency measures, conduct research and development on new or improved measures, and document potential federal and local cost reductions from their implementation.
3. EPA should support the systematic review of water-using products, the characterization of the markets for such products, and the establishment of performance metrics that achieve water efficiency without compromising performance. Mr. Osann noted that a national water-efficient product program needs a similar mechanism as that used in the energy field (a non-profit organization known as the Consortium for Energy Efficiency) to identify products that are "ripe" for the delineation of tiers of efficiency and potential labeling criteria.
4. An EPA initiative for voluntary water-efficient product labeling should complement existing and future minimum efficiency standards under the National Appliance Energy Conservation Act (NAECA).
5. EPA's implementation of water-efficient product labeling should avoid detrimental effects to existing voluntary programs, most notably ENERGY STAR, such as confusion in the marketplace or burdens upon manufacturers or distributors.
6. The scope of EPA's national water-efficient product initiative should not be prematurely narrowed at this early stage. Mr. Osann noted that a full range of products with and without efficiency standards is needed to show big thinking and that priorities can be set with water-efficiency standards.
7. EPA's selection of a name and logo design for a water-efficient product program should be fully supported by professional marketing research including field testing by a focus group.
8. EPA should continue to seek out the views of diverse stakeholders by a variety mechanisms. Mr. Osann commented that FOE would like to encourage EPA to solicit public input.

Mr. Osann concluded his presentation with three points:

· Water-efficient product labeling is a means to an end, not an end in itself;
· Water-efficiency measures must be supported by sound research and analysis to ensure cost-effectiveness and satisfactory performance; and
· Complementary strategies are essential to the success of programs to promote water-efficient products.

4. FACILITATED DISCUSSION: GOALS AND MARKET OPPORTUNITIES

The first panel of presentations was followed by the first facilitated discussion of the day. Fellow panelists and audience members were free to ask questions as well as comment on remarks given by the first set of panelists.

The first comment was given by panelist Kathleen Hogan of EPA's ENERGY STAR Program. Ms. Hogan stated that she likes the idea of the broad research requirement presented by Mr. Osann. However, to properly utilize this broad research base, Ms. Hogan believes the most effort must be used with the money that is available to capitalize on the opportunities that are available. She also commented that as water-efficiency product enthusiasts we must determine exactly what goals we want to achieve. Furthermore, Ms. Hogan noted that California stands out from the rest of the nation as a leader in water-efficient product initiatives which leads to different solutions than you might find with a national program. Ms. Hogan believes that as with ENERGYSTAR, successes in water efficiency can be found in unlikely places.

Ms. Dickinson responded that given more time she could present a more detailed description of the work being conducted in California. Ms. Dickinson does not believe that the consumers viewpoint in California is that different than the consumers on the East coast of the country but that it depends on local context. Ms. Dickinson believes that it is because of the success of ENERGY STAR that the WaterStar branding idea surfaced as a logical identity for water-efficient products.

Mr. Harris agreed with Ms. Hogan and Mr. Osann and reiterated that EBMUD measures success by market and sector and that they hired a marketing expert to manage their program.

Panelist Glen Pleasance, a Water Efficiency Coordinator with the Regional Municipality of Durham in Ontario, Canada indicated that there may be a potential conflict between ENERGY STAR and water-efficiency programs in Canada. Ms. Hogan replied that EPA's offices need to work together and at this time, it remains to be seen how it will all work out.

Margaret Bowman, of American Rivers, commented that the agriculture industry accounts for 85 percent of water usage in the United States. She asked if this industry had been fully explored and accounted for, given its large water usage. She recommended that EPA include labeling of agricultural practices and equipment in its water efficiency-labeling program. Ms. Dickinson replied that in California the focus has mainly been on urban water consumption and that the agriculture industry has not yet been fully explored. Panelist Richard Dale, from The Home Depot, commented that Congress should offer incentives to farmers to conserve water. Panelist Ron Wolfarth, of Rain Bird Corporation, stated that farmers have to move a lot of water around to irrigate their lands. Since the moving of water costs the farmers money, Mr. Wolfarth believes that there are market forces out there to drive agriculture's interest in water conservation.

Rolf Butters, from the Energy Efficiency and Renewable Energy group at the Department of Energy, questioned how one would indicate the amount of water usage on a product. Ms. Dickinson replied that in California, water usage accounted for nine percent of the total energy bill in the state. Therefore, California is looking to quantify the benefits of a water conservation program using energy savings as at least one of the components. Ms. Hogan replied that labeling can educate people but people still buy what they want based on performance and cost. Therefore, Ms. Hogan does not believe you can use a label to identify all possible benefits of a

product. Mr. Harris indicated that life-cycle analyses need to be conducted to look at all components as you may never know which one will be the driver.

Marc Hoffman, from the Consortium for Energy Efficiency, commented that is it important to get everyone to start on the national level since utility companies are on the local level. A national level of collaboration is needed with water efficiency, as it was done with ENERGY STAR. Please see Mr. Hoffman's written comments for additional information. These comments can be found on EPA's water-efficiency website at http://ww.epa.gov/water/water-efficiency.html. Mr. Osann pointed to AWWA as a good example of how to further conduct water-efficiency efforts, with proposals for sharing efforts and ideas. AWWA also encourages recognition with product development, selling, and consumption. Mr. Harris stated that studies in Seattle and Florida on multifamily submetering can provide information on water-efficiency initiatives. Mr. Dale commented that The Home Depot conducts meetings with all of its stakeholders to promote the ENERGY STAR brand. However, simply because a product is labeled with ENERGY STAR does not mean a customer will buy it. Consumers need to understand that water efficiency affects them now in the present.

Joe Cotruvo, of Joseph Cotruvo & Associates, commented on water efficiency related to the utility companies themselves and decentralized treatment. There is 'low hanging fruit' that can be easily tapped to improve water efficiency. He stated that about 10- 20 percent of the water that leaves a water treatment plant in many supplies the US is not accounted for due to leaks or non-metering. It may never reach the consumer; in some countries this could exceed 50%. Therefore, water treatment plants need to invest in reducing lost and unbilled water. In that way they become more efficient and produce less water and reduce a significant amount of the wasted water, and increase their revenues. In general, water suppliers in areas with plentiful water sources have little incentive to reduce water production. Unbilled water is lost revenue that can only be replaced by increased rates. Furthermore, since the cost of water production continues to increase and there is an inefficient use of water, combining central and individual treatment (decentralization) and even community-supplied bottled water could help with the problem of water inefficiency, especially in small communities. Mr. Cotruvo does not believe it is efficient to bear the cost to treat all water to drinking water standards when less than one percent of the water used is for drinking. A successful EPA funded pilot is currently being conducted in a small community in Northern California where drinking water is being further treated to remove arsenic at the individual homes before consumption. This is much less costly than treating all of the water. Mr. Osann acknowledged that lost water is a major issue and believes that most utilities are having problems quantifying the amount of lost water. Mr. Osann indicated that AWWA is beginning to tackle this problem with procedures for water loss efficiency.

Larry Acker, of ACT Inc. Metlund Systems, commented that EPA needs to do more to bring together organizations that are all doing the same thing in the area of water efficiency. For example, Oak Ridge National Laboratories is conducting water conservation studies and ACEEE has prepared a study on residential water conservation. In addition, the National Rural Electric Cooperative Association, is very involved in energy and water conservation issues. Mr. Acker recommends that EPA include these groups in future meetings. Mr. Hanlon agreed with Mr.

Acker and reiterated that one of the objectives of the meeting is to identify other groups working on water conservation issues so that a more comprehensive list of stakeholders can be developed.

Larry Galowin, of National Institute for Standards and Technology (NIST), stated that stakeholder groups need to be brought together at the political versus the technical level. Mr. Galowin believes that more attention needs to be focused on reaching out to members of the Senate and House of Representatives.

Stanley Wolfson, of the American Society of Plumbing Engineers, commented that the engineers and plumbers, those who would be designing and working with these new water-efficient products, were not invited to the meeting. He further stated that more research is needed as to what will happen after the consumer buys and installs the product into a home or business. Mr. Harris responded that steps are in fact being taken to foresee any problems that may occur when a product is installed into a home or business. These steps are currently taking place in consumer research labs, along with field research. Ms. Dickinson agreed with Mr. Harris and stated that California's labeling program is also looking at products already on the market. Ms. Dickinson does not believe that California will be changing legal standards for these products, but rather rating those currently on the shelf. Mr. Koeller also pointed out that labeling efforts are being put forth for items that are already on store shelves and they are looking at performance after they are installed.

Frank Gradilone, of United Water Resources, commented that consumers do not understand how much water they are actually using on a daily basis. He questioned what could be done to combat the misconceptions consumers have about water use. Mr. Harris responded by stating that retailers need to educate their sales associates about the issue of water efficiency as a whole. He recommended a program similar to the U.S. Department of Agricultures' Master Gardener program where consumers are informed and challenged. Mr. Osann stated that with the cost of water on the up rise for utility companies, consumers are soon going to feel the effects. Therefore, more consumers may become more apt to find ways to conserve the water supply in order to save money.

Dr. Larry Galowin, of NIST, commented that the scope of subjects and topics in the program were not sufficiently inclusive of all elements required for a labeling program that could penetrate to the levels of users for building applications. No aspect of regulatory approaches and means of entering into essentials for the requirements from codes and standards and plumbing practices of the proposed program and initiatives were presented.

Dr. Galowin indicated he was a principal developer of the HUD National Potable Water Conservation Program of the late 1970's that extended over broad elements that were not introduced at this hearing. The needs here for EPA require added ranges of research developments and investigations similar to those from National Bureau of Standards (now NIST) and HUD that also included private sector studies on communities and buildings water usage with consequences involving implementation and economics of incentives. A most significant determinant missing in presentations related to human factors in determination of acceptable applications and usage of water savings equipment. Trickle faucet flows, or showerheads flow

rates at varying pressures and hand adjusted regulators, may not suffice for the intended shampoo and soap suds removal. National standard reference test materials for applications to performance measurements of appliances were developed and made available. Reports indicate EPA essentials which need to be covered. Labels cannot alone suffice without such foundation. Those topics included:

> Low Flow Shower Distribution Test Method; Shower Flow Rate Control for Variable Pressures; National Standard ASME A112.19.2 Adoption of Water Closet Total Solid Wastes Extraction (early 1980's); Water Closet Wastes Solids Drain Line Transport (computer numerical analysis method *{now on computer disc}* and test materials); Dormitory Low Flow Fixtures Applications (Stevens Institute of Technology site); Economic Impacts of Community Water Conservation; Water Closet Dilution Test Measurements, and Dishwasher and Washing Machine Appliances.

A most glaring gap in scope is lack of recognition that building regulatory systems are established by local political entities that promulgate regulatory requirements. Practically all aspects of building codes and practices require reference to national codes and standards conformance in applications and acceptance protocols. EPA labels cannot suffice for such acceptance in lieu of those requirements. Representatives of those development and regulatory organizations need to be involved by EPA. (At do-it-yourself levels such restrictive requirements for repair, renovation, or replacement of fixtures and appliances may not be applicable except for major renovation actions.)

Dr. Galowin commented that there is a need for plumbing research in this country. Research in the area of water efficiency and plumbing is currently being done in Japan and Europe with dynamic test towers. Dr. Galowin questioned whether data were evaluated to see if consumers would actually save money. He stated that it is often difficult to measure the rate of return and utilities need guidance publications that apply to water conservation impacts from adopted methodologies for water savings. Economic consequences from water savings should noe result in greater water bills. Consequences from design changes of products sometimes may not have extended lifetimes and defeat intended purposes for consumer acceptance. Mr. Harris replied that manufacturers focus most of their efforts on the rate of return on their investment rather than on consumers that are somewhat unpredictable.

Rolf Butters, of DOE, questioned whether this program would look at new plumbing codes dealing with gray water reuse and stated that golf courses are a large market that could conserve gray water. Ms. Dickinson responded by stating that California has codes for gray water but that the gray water codes do not get as much investment on the residential side as recycled water. Mr. Harris commented that they are supplying monetary incentives for gray water usage, however, he acknowledged that in wetter climates it may not always be economical to store water before it can be used.

Margaret Bowman, of American Rivers, believes that maximum groundwater recharge through stormwater management is a potential low hanging fruit with respect to water conservation and recommended that EPA include best stormwater management practices in any

water efficient labeling program. Please see Ms. Bowman's written comments for additional information. These comments can be found on EPA's water-effciency website at http://www.epa.gov/water/water_effciency.html. Mr. Osann agreed with Ms. Bowman and stated that the City of Austin has a program on rainwater reharvesting that deals with this issue. Ms. Dickinson indicated that research in California has tested irrigation controls with respect to dry weather runoff.

Joe Cotruvo commented that EPA's ETV program is a potential vehicle for providing manufacturers and consumers the performance of water-efficient products so that good purchasing decisions can be made. He also stated that lab testing water-efficient products alone are not the answer. Consumer attitudes and expectations are an important factor on whether or not a water efficient product will be successfully adopted. ETV provides an opportunity for a spectrum of stakeholders to participate in the design of test protocols so as to provide results that are useful to all of them. Ms. Hogan responded that product performance is in the eye of the consumer and therefore, appropriate testing is required. Mr. Koeller agrees that lab testing is not sufficient by itself and recommends field-testing of products as well. Please see Mr. Koeller's written comments for additional information. These comments can be found on EPA's water-efficiency web site at http://www.epa.gov/water/water_efficiency.html.

Larry Galowin, of NIST, recommended that EPA develop a methodology that takes into account the human use side of product usage.

5. PANEL DISCUSSION: WORKING PROGRAMS AND INTERNATIONAL PERSPECTIVES

The second discussion focused on programs, similar to the proposed water-efficiency programs that are currently in place. The discussion also provided international input regarding water-efficiency product labeling in the countries of Australia and Canada.

The Australian Water-Efficiency Labeling Program: Water-Efficient Product Market Enhancement

Dr. Steve Cummings, Caroma Industries Limited

Dr. Steve Cummings, the Research and Development Manager of Caroma Industries in Australia was the first presenter in the second round of panelists. Dr. Cummings described Australia's current system of water product labeling and provided background information on why the system was developed, how it is currently working, and spoke of future developments.

Australia's population is periodically exposed to prolonged droughts. Due to current drought condition in Sydney and Melbourne, where about 30 percent of Australia's population resides, mandatory water restrictions are in place throughout the country. Due to these water restrictions, Dr. Cummings stated that there became an urgent need for extremely efficient plumbing products. Currently, with the new system in place the residential water usage in Australia is about 40 gallons per day per person.

Dr. Cummings then explained the chronology of Australia's water-efficiency labeling program. In 1988 the original voluntary program was initiated by the Melbourne Board of Works for shower heads and dishwashers. This system involved a two tier rating of A or AA. This provided consumers with the means to identify the most water-efficient product. In 1992, the program came under the control of Standards Australia and in 1995, a new three tiered rating system was introduced to the public. The new rating system rated water-efficient products as AAA for excellent, AA for good, and A for acceptable. In 1999, Water Services Australia of Australia (WASA) took over responsibility for the program. Dr. Cummings believes that the voluntary water-efficiency labeling program's success in Australia has been due to the seamless acceptance of the program by consumers, water regulators, and industry. Consumers have been educated on the value of the label and producers pay to use the label on their products. In addition, consumers are given generous rebates on water-efficient products that are used inside and outside the home. A few examples of rebate rewards include: $150 for a rainwater tank to toilet system, $150 for a washing machine, and $100 for a dishwasher.

Recently, the rating system was upgraded and introduced to the Australian public. The 2003 standards have been upgraded from the 3-A labeling system to a 5-A labeling system, with 1-A only being "moderately" water efficient to 5-A having "excellent" water efficiency. This new five A labeling system is expected to encourage product development to further reduce in-house water usage. Dr. Cummings explained that most manufacturers already achieve a 3-A rating on their products and the new rating system will provide more incentive to manufacturers to develop more efficient products.

Accompanying the new system is a very detailed rating chart describing the expected product performance in terms of water usage from the 1-A to the 5-A rating. For example, Dr. Cummings explained that showerheads at the1-A level would produce between 3.2 to 3.96 gallons per minute (gpm), a 2-A level would produce 2.38 to 3.2 gpm, a 3-A level would produce 1.98 to 2.38 gpm, a 4-A level would produce 1.6 to 1.98 gpm, and a 5-A level would produce a maximum of 1.6 gpm. At this point, Dr. Cummings brought up the issue of user comfort. Currently showerheads of a 4-A and 5-A status are not available to the public because the performance standards were not to a level of consumer satisfaction. Dr. Cummings also used the example of toilets to demonstrate that system performance is a critical consideration. Currently, toilets of 4 and 5-A status are undergoing further research to identify the behavior of waste in the drainline following a flush discharge. In the case of toilets, most Australians have 3-A rated toilets that have an average flush volume between 0.93 and 1.06 gallons of water.

Dr. Cummings believes that Australia's water-efficiency product labeling programs will continue to remain a high priority in the country. Drought conditions do not seem to be improving, thus continuing the high profile and urgency status for water conservation in the country. Future actions that are currently in progress include: a study commissioned by the Australian government to examine the impact of introducing a national mandatory water-efficiency labeling system with point of sale legislation regulated and managed by government agencies. These two future actions are scheduled to be introduced in the year 2005.

According to Dr. Cummings, 80 percent of in-house water usage products would need to be labeled under a national mandatory water-efficient-labeling program. Products that would fall under the mandatory labeling system would include: shower heads, toilets, clothes washers, and dishwashers. The projected savings of in-house water usage would be 4.7 percent by 2016. From these calculations AUD $300 million is the projected overall net benefit in energy and water savings.

Dr. Cummings stated that changing the logo of the water-efficient labels has also been a recent proposition. As it stands currently, the more "A's" a product is given the higher the efficiency rate is with that product. Before the "A" logo, water drops represented efficiency. Now, the logo may go in yet another direction changing from "A's" to stars. The more stars a products is given, the higher water efficiency of that product.

To wrap up the presentation Dr. Cummings emphasized that as we move towards sustainable sanitation systems, consumer identification of the most efficient plumbing products will be vital to minimize water and wastewater.

Lessons from the ENERGY STAR Experience
Kathleen Hogan, Climate Protection Partnership Division, US EPA

Kathleen Hogan, Director of Climate Protection Partnerships Division of EPA, gave the next presentation of the day. Ms. Hogan described the success of ENERGY STAR and indicated that it has become a model many want to build upon. Yet, Ms. Hogan stressed that to effectively build upon it one must understand the roots of ENERGY STAR's success, lessons learned, and costs. As an overview of ENERGY STAR Ms. Hogan cited the residential efforts and the commercial/institutional/industrial efforts that were made to create success for the program. In residential efforts labeled products and system-wide improvements are promoted. Commercial, institutional, and industrial success was achieved through the promotion of superior energy management, with labeled products playing only a minor role. This superior energy management required commitment from the top of corporations and standardized measurement tools to help companies evaluate where they are and figure out where they can go in energy conservation.

Building upon success requirements, Ms. Hogan described the intersection of interests that must be taken into account if a program, such as, ENERGY STAR is to achieve success. Interests from environmental protection groups, manufacturer/retailer, consumer preferences, and utility program sponsors all need to be taken into account. From a customer standpoint products must conform to lessons from green marketing, which show success only when a product delivers desired functions and environmental benefit is extra. Ms. Hogan believes that U.S. consumers tend to be skeptics of green products and do not want to trade functionality for environmentally sound products. Products must also deliver on savings claims. If there is a large consumer behavior element to produce savings, a product is less appropriate for labeling since a label cannot deliver on performance. Ms. Hogan continued by pointing out that ENERGY STAR success can also be attributed to the big educational aspect given to the program and strong government backing.

Key partners include: retailers, manufacturers, and energy program sponsors. Ms. Hogan stated that retailers want sufficient labeled products throughout the store to warrant company promotions. They also want the government to carry the consumer education message and the credibility of a label. Manufacturers want an initiative to highlight high-profit products while expressing concern that some products can negatively reflect on their own products. Energy program sponsors need to see real savings to continually justify a program such as ENERGY STAR.

From a governmental standpoint, many things must come together for them to back a program like ENERGY STAR. Ms. Hogan believes that an environmental program must show substantial benefits. Since voluntary programs are expensive, government officials want to see good use of taxpayer's dollars from the very beginning. Government backing allows for a unified message across all products. In the case of ENERGY STAR, that unified message is "save energy with no sacrifice." Government support also sent a message consistent with the Agency to protect the environment and maintain quality of life.

After ten years of ENERGY STAR labeling, many lessons have been learned. Ms. Hogan maintains that major successes have been consistent with the fact that many technology fixes have been invisible to the consumer, products such as appliances offer desirable consumer benefits, and regional players have used the national program to standardize and coordinate local programs. Before the implementation of ENERGY STAR it was estimated that $1 billion worth of energy was being used while products were turned off. Secondly, the program has found that people are not motivated to retire products early. For example, encouraging early retirement of AC equipment showed limited success (without sizable cash incentives). Ms. Hogan believes people are motivated by crisis therefore, a label alone does not do much. Third, ENERGY STAR has also come to understand that if there are no performance trade-offs, people do in fact favor green products. However, if you can get a consumer to invest in more expensive products, they want to see their investment returned in three to four years.

Since the implementation of the program, Ms. Hogan maintains that the market has shown significant penetration of ENERGY STAR products. Ms. Hogan believes this has happened largely because of the notable amount of rebate money that is behind the program. The most penetration can be seen in the market of office equipment and consumer electronics.

Yet, Ms. Hogan does not believe that consumers fully trust the ENERGY STAR label. Even though awareness is at 40 percent after 10 years, understanding and trusting the label remains a challenge. Ms. Hogan maintains that it is difficult to build awareness with products that people only buy every ten years. Along with the awareness challenge comes the challenge of building a program that needs a multiple staged process. In the case of ENERGY STAR, the analysis ground work is put forth first, followed by product labels and stakeholders begin to invest only after awareness is built.

Ms. Hogan emphasized that the ENERGY STAR program is expensive. Along with the many steps it takes to build the program, there are many other costs involved with the whole process such as setting performance specifications, administering the program, conducting

consumer outreach, providing up-to-date product lists, protecting the integrity of the label, and evaluating the program.

Ms. Hogan believes that ENERGY STAR's roots of success lie in many different areas. First, large potential climate benefits have emerged due to 30 percent savings in many homes and buildings over new standards. Secondly, there remains a big potential market place with more than 50 percent of people choosing to help the environment (and save money) if they have better information on what to do and there are no tradeoffs. Third, a compelling government message is that improving the environment through efficiency saves money while often enhancing performance and comfort. Along with this compelling message, the government also serves an appropriate role by surmounting market barriers with information and reducing transaction costs and perceptions of risk to the program. Lastly, energy efficiency is consistent with market incentives for key market players. Efficient products often offer greater quality, performance, and comfort. Therefore, selling more efficient products often provides more profit, making energy-efficient products very attractive to stakeholders.

Ms. Hogan proceeded to mention that there are products and industries, such as the auto manufacturing industry, that will not fit within the ENERGY STAR program. Currently, efficient cars often compromise features and/or performance and many consumers also perceive them to be less safe. Furthermore, the market structure does not support sales of efficient vehicles and Ms. Hogan does not believe that labeling can overcome these financial disincentives. Also, Ms. Hogan believes that sometimes, the program does not present a great advantage over basic national standards. Therefore, labeling becomes difficult since it does not pose an overall better outcome of savings. For example, in the case of plumbing standards, Ms. Hogan maintains that a home with national plumbing standards and energy efficient appliances versus a home with advanced plumbing standards and energy efficient appliances will not show significant differences in water savings.

Ms. Hogan also believes that significant labeling issues arise in the cases of home outdoor water use that involve the choices of plants, landscape planning, irrigation, and reuse/recycling of water. Labeling issues include whether the savings are due to product usage or practices and whether the products alone will result in savings. In the case of landscape planning the question of product or practice arises. Ms. Hogan also questioned the role of standards and practices versus product in water-efficiency measures for the commercial sector.

In conclusion, Ms. Hogan emphasized that saving water is important and that a combination of behavior changes, services, and polices will result in a successful program. Since labeling is expensive, requires particular market conditions, and can backfire in the market place, Ms. Hogan believes that work must be conducted to determine the most effective water saving solutions.

Canadian Support for a Water-Efficient Market Enhancement Program
Glen Pleasance, Canadian Water and Wastewater Association, and Region of Durham

Mr. Glen Pleasance was representing two organizations at the day's meeting. He chairs the Canadian Water and Wastewater Association's (CWWA) Water Efficiency Network and also represents the Region of Durham in Ontario, Canada. Continuing the international input on a water-efficiency labeling system here in the United States, Mr. Pleasance spoke of success they have had in Canada with their current outreach efforts to promote water-efficient products.

Mr. Pleasance began with an overview of CWWA, which was established in 1986 to represent Canada's municipal water and wastewater systems, provincial and federal codes, standards, and policies. Membership is over 400 people in both the public and private sectors. For more information go to http://www.cwwa.ca. Mr. Pleasance maintains that CWWA strongly supports the initiative for the United States to implement a water-efficiency program. CWWA has been working in cooperation with the Canadian Federal Government on the introduction of a Canadian Water Efficient Labeling program, in cooperation with the USEPA since early September 2003. Thus far, a proposal has been submitted to four federal agencies and has received positive 'unofficial' response from Environment Canada. CWWA will continue to lobby the federal government and recently sent out an official announcement to its membership to solicit support for a labeling program.

Slightly switching gears, Mr. Pleasance spoke of the Region of Durham which is on the east side of Toronto. The region has a population of 500,000 and is expected to double within the next 28 years, a major driver for further developing water-efficiency measures in Canada. Water efficiency makes growth less costly because the infrastructure doesn't expand at the same rate as growth thus this program could greatly benefit Durham Region and all water utilities.

The Durham water conservation program is implemented by the Works Department. Durham uses water efficiency as a planning tool so that infrastructure expands slower than growth in order to reduce the cost of this growth. Since most of Durham's growth is residential, new homes are being made more water efficient. Mr. Pleasance indicated that they are in their third year of planning a program with a homebuilder to upgrade all water using fixtures and appliances. Under this program, homebuyers' pay about $1,000 and get about $2,000 of upgraded equipment. Initially, 100 homes are being upgraded and they will be monitored to measure water and energy savings and reductions in greenhouse gases. These homes will be compared with 100 'builder standard' homes in the same development. This will enable cost/benefit analyses to be calculated for each upgrade. Durham staff will also be conducting customer satisfaction interviews with 'upgraded' homeowners to further understand the project's impact. The first homes will be occupied in August of 2004. Mr. Pleasance believes that they would have moved farther and faster if there were a water counterpart to ENERGY STAR.

Mr. Pleasance continued his presentation by indicating what the United States could consider when forming a national water-efficient-labeling program. Mr. Pleasance believes that water-efficient labeled products should indicate "gallons per use," a payback period and cost of operation (after payback). When consumers buy a water-efficient product, they should be able to see the utility savings. Therefore, research needs to be conducted to compare the cost of operation (after payback) of standard and efficient products. In this era of rising utility costs consumers need to see savings over the product's life span. Mr. Pleasance also stressed that

focus group testing must be performed with every group of people being taken into consideration including consumers, manufacturers, retailers, trades and farmers.

When developing a water-efficient labeling system there are several aspects to take into consideration. Mr. Pleasance noted that too many public education initiatives are launched without proper testing. Since the target audience is much broader than that of ENERGY STAR, slogans, icons, and 'the look' of the campaign must be well tested before it is launched. In effect, pre-launch testing is a critical factor in ensuring the success of a Water Efficient Labeling program's success.

Mr. Pleasance finished his presentation by stating that Canada will continue to pursue a Federal host for its water-efficiency labeling program and would like to continue to work with everyone at this meeting to make the U.S. program a success.

6. FACILITATED DISCUSSION: PROGRAM APPROACHES AND GREEN MARKETING

Tony Gregg, representing the City of Austin, questioned how ENERGY STAR would deal with the issue of water efficiency in its program especially since some energy saving products use water wasting techniques. Ms. Hogan responded that some ENERGY STAR products and water-efficient products go hand-in-hand, like dishwashers. However, other products like washing machines would be handled differently. One option would be to have the manufacturers provide the water savings information on their web site since it would not be on the label. Because it is difficult to deal with conflicts between energy and water, Ms. Hogan believes that the best approach would be to focus on what the product is designed to do and then proceed from there. Ms. Hogan believes that the role of the label is to identify a product that a customer would rather have over a standard product, not provide all of the savings information.

Larry Galowin, of NIST, commented that current waste drain lines in the United States are too long and inefficient. A need for a ranking criteria for various installations (shopping malls, homes, apartment buildings and public arenas may become necessary). Mr. Galowin believes that EPA should go look at the highly efficient waste lines being used in Sweden and Japan. There, the use of new devices for siphon extraction/collection and transport have been applied; waste lines with elliptical cross-sections also are used for better solids transport. Such designer's aids are available from the DRAINET computer program for Building Drainage Design.

Ed Osann asked Ms. Hogan about who was responsible for developing test procedures for ENERGY STAR products. Ms. Hogan responded that the process varied from product-to-product. For fans, EPA worked with the manufacturers who shared process information across the industry. Since it is difficult to test the lifetime of compact fluorescent light bulbs which is over 6 years, they needed to come up with new proxy tests using private laboratories and field engineers.

Kevin James, from Alliance to Save Energy, commented that the development and promotion of water efficient products needs to be a national effort since states and localities are not equal in terms of funding and education on water efficiency. Mr. James believes that EPA should work to educate the utilities since many do not have any efficiency programs in place. Mr. James also believes that program benefits will not be realized until the utilities know how to use the label as a planning tool.

Valerie Nelson, of the Coalition for Alternative Wastewater Treatment, commented that there is very little innovation and research being conducted on wastewater systems. Ms. Nelson believes that EPA should focus on supporting technology development. Ms. Hogan responded by questioning whether EPA is the best agency for basic research. Under the ENERGY STAR program, DOE conducts a lot of the research. Ms. Hogan believes that there are a lot of tools available for groups at different places on the technology curve. Joe Cotruvo of Joseph Cotruvo & Associates, commented that the government does not have a good track record with respect to research and development of commercial products because it does not react rapidly to changed needs and consumer requirements. He believes that the government's role should be to provide encouragement and verification of performance on commercial products, such as through ETV. Research and development should not be the government's focus. The private sector, as in Third Party Standards and Certification organizations, is in the best position to work with industry and government to produce consensus performance standards and to independently test commercial products and certify their performance against those consensus standards. Mr. Osann responded that there are many reasons why cutting edge technology research does not take place in many industries. Mr. Osann believes that the government should work at forming an effective partnership with industries to better fund research while the industry focuses on pushing the technologies forward.

Larry Acker, of ACT Inc. Metlund Systems, commented that the environment drives technology and the market drives products. Mr. Acker believes that there are a lot of new technologies being developed that do not know where to go for promotion and use. Mr. Acker also believes that most new houses are not being plumbed for water conservation nor designed for energy efficiency. Last year there were over a million homes built in the U.S., most of which were built to the lowest cost because there is no incentive to structure a home more efficiently. Among these new homes the most common complaint from customers was that it took too long to receive hot water. Mr. Acker maintains that builders and plumbers are not getting the new technologies and even if they had them, they do not have an incentive to use them. Mr. Pleasance responded that it does not cost much more to build water-efficient homes and they found it helpful to educate the builders directly on water-efficiency measures and water-efficient products. Mr. Pleasance believes that the builders using water-efficient products spend less time dealing with complaints from the homeowners. In addition to educating the builders, Ms. Pleasance believes they need to start educating the retailers. Ms. Hogan commented that the ENERGY STAR program does work with builders and have even begun labeling a whole home. In certain areas, over 20 percent of the homes are ENERGY STAR homes. Mr. Harris indicated that builders in Northern California must submit a water demand requirement report before developing in new areas to identify new water sources. These builders are seeking information on water-efficiency measures to help them meet their requirements. Mr. Osann stated that EPA

should take a systematic approach for implementing water efficiency in homes. This would require EPA to look at both old and new homes with respect to water efficiency including future ENERGY STAR homes. Ms. Dickinson further added that people do want to reside in green homes even though they are currently more expensive.

Larry Galowin, of NIST, questioned EPA's ability to penetrate new homes with water-efficient products without new codes.

Stanley Wolfson, of the American Society of Plumbing Engineers, commented that ENERGY STAR is a good program but does not believe it presents the whole picture with respect to water efficiency. Mr. Wolfson maintains that a water-efficiency program must address the issues associated with sanitary sewer systems. Please see Mr. Wolfson's written comments for additional information. These comments can be found on EPA's water-efficiency web site at http://www.epa.gov/water/water_efficiency.html.

7. PANEL DISCUSSION: MANUFACTURER'S AND RETAILERS' PERSPECTIVE

The third and final panel discussion consisted of members of the manufacturing and retail industries.

Water Conservation, A Retailer's Perspective
Richard Dale, The Home Depot

Mr. Richard Dale, Global Product Merchant from The Home Depot, gave the first presentation of the third panel. Mr. Dale began his presentation talking about the success of ENERGY STAR and the home remodeling industry, which is a $500 billion/year industry. Mr. Dale summarized the results of ENERGY STAR 2002 to illustrate the possible results of a water-efficiency program. The 2002 results included:

- Saving $7 billion on energy bills;
- Reducing greenhouse gas emissions by 23 million metric tons carbon equivalent, equivalent to taking 14 million cars off the road;
- Offsetting more than 15,000 megawatts of peak electricity demand; and
- Saving enough energy to power 15 million homes.

During the first ten years of the ENERGY STAR program, one billion ENERGY STAR products were purchased and 100,000 new homes were constructed to ENERGY STAR specifications.

Mr. Dale believes that the home building and home remodeling industry will continue to grow and the rising cost of fuel and utility bills will drive the customer to buy energy efficient products that are innovative and trendy. Mr. Dale maintains that government supported programs will help businesses and individuals conserve water and protect the environment through superior water efficiency. He believes that a partnership between EPA, USDA, industry, academia, businesses and individuals should develop a water-efficiency rating system for new

and existing products, new home construction, new building construction, landscaping protocols, and nursery protocols. Mr. Dale believes that a water-efficiency rating program would emphasize the benefits of water-efficient products. For example, installing water-efficient fixtures and repairing leaks can save a household up to 20 gallons of water per person per day. If all U.S. households installed water savings features, water consumption would decrease by 30 percent or 5.4 billion gallons per day. Also, since outdoor water usage can account for 50 to 70 percent of a home's water consumption, Mr. Dale believes that proper outdoor watering and xeriscaping present additional opportunities for water savings.

Mr. Dale further believes that a rating program for water-efficient products would present retailers with opportunities to interact with their customers and present them with valuable information about the program. Steps that The Home Depot has taken include: customer clinics, store signage, brochures, web site information, promotions during peak water consumption months, information in their advertisements, and public relations and outreach.

Mr. Dale then went on to suggest the following possible opportunities for EPA to promote water efficiency:

- Offer EPA endorsed water conservation solutions;
- Partner with USDA and others to prevent products from being at a disadvantage;
- Leverage EPA "water brand" and public awareness campaigns;
- Conduct national events and develop regional programs for target markets such as Arizona, Colorado, and Texas;
- Develop Pro/Contractor relationship programs and incentives;
- Develop protocols and a rating system to establish "WaterStar" rating for new home construction;
- Develop programs for the Hispanic and Asian markets;
- Develop K-12 water conservation educational programs;
- Establish a uniform reporting process for both manufacturers and retailers;
- Develop a Steering Committee of retailers, utility companies and manufacturers to drive innovation and technology;
- Fund a study to determine consumer purchasing decisions;
- Establish EPA targets through 2010;
- "Fast track" certification programs; and
- Consider a secondary label for products that conserve water.

In September of 2003, The Home Depot partnered with Water Use It Wisely, cities in Arizona, EPA, and suppliers to provide water conservation information, training and products to customers in Arizona during the month of September. The goal of the campaign was to position The Home Depot, in partnership with cities throughout Arizona, as the resource for water conservation information, training, and products, while furthering the brand and recognition of the Water-Use It Wisely conservation campaign. The campaign promoted consumer awareness on water use, demonstrated simple ways to save water, empowered the consumer to make a positive impact on their own, and reinforced the water conservation ethic throughout Arizona. During the campaign, seminars with water-efficiency experts were held for managers and events

were held in the store for the customers to teach them about water efficiency. The water-efficiency campaign was also promoted in The Home Depot Catalog.

In conclusion, Mr. Dale pointed out that labeling products is a great idea, as long as labeling is done where it makes sense. People want instant gratification, therefore, if a product is labeled the consumer should be able to see savings within a year or so of purchasing the product. Educating the consumer needs to be a major aspect of any water-efficiency labeling effort.

Water-Efficient Product Labeling: An Irrigation Perspective
Tom Kimmell, Irrigation Association

Mr. Tom Kimmell, Executive Director of the Irrigation Association, presented information on the issues associated with the water-efficient product labeling of irrigation products. The major weakness associated with the efficiency of irrigation products is the homeowner. Mr. Kimmell maintains that the controllers on irrigation systems have become very efficient by incorporating multiple start times, multiple zones, automatic weather adjustments, and remote programming. But, since the consumer must operate the system and doesn't vary the settings as needed, outdoor systems still over water by about 30 because the settings remain geared to the driest time a year and aren't adjusted for changing weather conditions.

To overcome this weakness, companies are developing passive controllers that do not rely upon the homeowner. These systems analyze the moisture content of the soil or evaluate the evapotranspiration of the plants and apply the water according to these measurements. This type of system has been named "Smart Water Application Technologies" (SWAT) by the irrigation industry and water suppliers. Currently, there are over 20 different organizations which have 25 different technologies that are developing test protocols for the passive controllers. The Irrigation Association and Water Supply industry have joined together to establish test protocols to evaluate these varied products. The Irrigation Association has also formed a market transformation subcommittee to develop recommendations on how to convert the marketplace to "Smart Water Application Technologies". Mr. Kimmell believes that this collaborative effort is a good opportunity for involving a water-labeling program.

Water-Efficient Product Labeling
Ron Wolfarth, Rain Bird Corporation

Ron Wolfarth, Director of Rain Bird Corporation Commercial Division, stated that Rain Bird supports a program called "Intelligent Use of Water™" through product labeling. Mr. Wolfarth believes this program gives the consumer a means to evaluate the product, improves the company's ability to communicate water-efficient features to consumers, helps create a larger market for water-efficient products, and shows potential to increase investment for efficiency.

Mr. Wolfarth described the concerns associated with this labeling program. One major concern is that irrigation efficiency is system dependant. Many irrigation components can contribute to irrigation efficiency, but to realize the efficiency savings, a system must be properly designed, installed, maintained, and managed. Mr. Wolfarth also pointed out that sprinklers are

not like light bulbs or toilets in that savings are not realized by simply replacing sprinklers with a more efficient model. To further illustrate the differences between irrigation systems and other water-efficiency products, Mr. Wolfarth commented that washing machines are highly engineered, self-contained systems that realize savings in water usage almost instantly. However, irrigation systems are built onsite to conform to site-specific conditions, making technical expertise an absolute requirement before savings can occur. Irrigation efficiency is also a management issue. Efficient systems that are poorly managed can become inefficient. It is possible (even likely) that irrigation products that are labeled as water efficient may simply waste water more efficiently than nonlabeled products.

Mr. Wolfarth expressed concern that purchasing a "WaterStar" irrigation product may mislead consumers and not realize any savings due to poor management. Therefore, consumers may conclude that there is no merit to "WaterStar" products. Another concern Mr. Wolfarth expressed was that minimum thresholds do not give an incentive for further innovation but rather, they could contribute to making water-efficient products more of a commodity and harm advancements in efficiency.

Mr. Wolfarth then presented several suggestions for developing a water-efficient product labeling system for irrigation products. Although he is not sure it is technically possible, Mr. Wolfarth suggested developing an efficiency rating for irrigation products, like miles per gallon for cars and energy rating on refrigerators. Alternatively, he suggested developing a multi-tiered system that is continuously reviewed and adjusted. Furthermore, he recommended that the program stress to consumers the need for a system efficiency approach and encourage consumers to hire licensed irrigation contractors that are certified by the Irrigation Association.

Association of Home Appliance Manufacturers
David Calabrese, Association of Home Appliance Manufacturers

David Calabrese, Vice President of Government Relations of the Association of Home Appliance Manufacturers (AHAM), was the final panelist of the day. Mr. Calabrese welcomed the opportunity for industry involvement in this program. Generally, industry supports voluntary market-pull programs because they provide consumers with information to make purchasing decisions, provide manufacturers with a valuable marketing tool, and they benefit the environment. Mr. Calabrese believes that an effective program should be simple to administer, avoid redundancy with existing programs, achieve critical national goals such as energy and water efficiency by working with Congress, be transparent, and involve all stakeholders.

Mr. Calabrese maintains that the home appliance industry strives to produce water-efficient products such as clothes washers that use sensors to detect clothing load size, intelligent dishwashers that can limit cycle water needs and rinse options, and improved mechanics. He also maintains that industry supports government incentives to encourage energy and water efficiency such as the clothes washer tax credit being proposed in the 2004 Energy Bill, and state-lead energy efficient appliance rebate programs.

To further highlight the growing market for water-efficiency appliances, Mr. Calabrese discussed today's trends and standards for clothes washers and dishwashers. Innovations have led to increased water and energy efficiency by using fewer wash/rinse cycles, and less water and energy usage. As it stands today, clothes washers are 69 percent more energy efficient than 20 years ago. DOE standards require an increase in water efficiency that will achieve dramatic water savings. The 2004 standard will result in a savings of 4 gallons per wash or 1,568 gallon per year and the 2007 standard will result in a savings of 18.1 gallons per wash or 7,095 gallons per year. In addition, he noted that the cumulative water saving is estimated at 11 trillion gallon of water, benefiting both the consumer and the environment. Mr. Calabrese maintains that manufacturers already produce clothes washers that meet the 2004 DOE standard and that about 10 percent of the clothes washers manufactured are currently meeting the 2007 standard, demonstrating the industry's commitment to water efficiency. With respect to dishwashers, Mr. Calabrese contends that they are 58 percent more energy efficient than 20 years ago and that the new DOE test procedure can accurately measure the effect of new technologies.

AHAM supports DOE's ENERGY STAR initiatives including its product category development, level review, stakeholder participation, and data collection. Mr. Calabrese believes that in developing a water-efficiency label, EPA should work with existing DOE programs to coordinate activities of their account managers and draw upon their expertise and experience. Mr. Calabrese recommends that the water-efficient label program be developed through an accountable and transparent process that allows for industry consultation and input. In addition, he recommends that the program be developed with sufficient lead-time to allow industry to effectively participate.

8. FACILITATED DISCUSSION: PRODUCTS OF INTEREST AND BUILDING PARTNERSHIPS

Heather West, from Whirlpool Corporation, concurred with the statements made by Mr. Calabrese. Ms. West maintains that the savings realized by the clothes washers are largely due to the National Appliance Efficiency Compliance Act under which a voluntary agreement was reached to develop the next set of standards. She believes that there should be a progressive balance of standards and that standards should be voluntary.

William Cutler, of the Niagara Conservation, stated that the government needs to raise the bar on flow rates for plumbing fixtures. He also mentioned that labeling is a great idea but the industry needs to consider the price versus benefit to the consumer.

Dennis Griesing, of the Soap and Detergent Association, commented that there needs to be a systems approach to new appliances to address the impacts of new technologies on the soap and detergent industry. A reduction in hot water and water usage in new clothes washers put more pressure on the detergent to do its job and sometimes requires development of new detergent products that work effectively in water efficient machines.

Ms. Dickinson expressed her approval of The Home Depot's Arizona campaign for water conservation and asked whether this was a pilot program that would role out to more locations. Mr. Dale responded that The Home Depot does plan to run this campaign in other locations and will work with the EPA and Water use it Wisely to identify potential locations. With respect to irrigation products, Ms. Dickinson believes that it is appropriate to extend labeling to irrigation systems even though human behavior is a major issue to be overcome. She maintains that one can continue to evaluate efficiency standards in conjunction with a labeling program.

David Viola, of the Plumbing Manufacturers Institute, expressed his desire for the Plumbing Manufacturers Institute to be among the stakeholders directly involved in the development of a water-efficient-labeling program. He recommended that EPA look at the whole system and consequences of instituting further water restrictions for plumbing products. For example, restricting the flow of water below 2.5 gpm for showerheads increases the risk of scalding and thermal shock. Mr. Viola also stated that gray water model requirements have been developed by the model code organizations (ICC and IAPMO).

David Steiner, of the Maytag Corporation, made several comments on water-efficient product labeling. Mr. Steiner stated that it is very important to have a standard-consistent program as there is already some confusion with the use of terms such as "WaterStar" and "Water Smart." Mr. Harris clarified that California is not actually using the term "WaterStar" but that he used it as a placeholder. Mr. Steiner stated that Maytag understands that labeling costs money, as they have spent a lot of money on their brand. He also indicated that auto manufacturers should be included under ENERGY STAR. Mr. Steiner believes that compared to the appliance industry, the auto manufacturers industry has done very little in the world of energy efficient products. He also believes that retailers and manufacturers need more education on water and energy efficiency issues and challenges everyone to educate consumers and make them feel empowered about the choices they make rather than imposing government regulations on them. Please see Mr.Steiner's written comments for additional information. These comments can be found on EPA's water-efficiency web site at http://www.epa.gov/water/water_efficiency.html.

Mr. Osann believes that the fourth pillar (using water efficiently) described by Tracy Mehan in his opening remarks could be one method for measuring the success of the program. He encouraged EPA to develop performance metrics for water efficiency early on in the program.

Gunnar Baldwin, of Toto USA, Inc., commented that estimations of water efficiency are based on the assumption that all products act the same with the same level of performance and this is not true. Similar products do not always perform to the same level.

Tony Gregg, of the City of Austin, believes you can come up with a product management program for irrigation systems that promises if you buy a specific product, you will get XYX and a management system.

Rolf Butters, of DOE's Energy Efficiency and Renewable Energy group, cautioned EPA not to leave out the holistic view of energy impacts on water. He also recommended that EPA

use simple branding, preferably one name or use a subgroup under ENERGYSTAR for products that use both energy and water. Please see Mr. Butters' written comments for additional information. These comments can be found on EPA's water-efficiency web site at http://www.epa.gov/water/water_efficiency.html.

Larry Galowin, of NIST, asked EPA to consider tiered water-efficient labeling system for home plumbing to deal with the differences in the lengths of waste drain lines. Please see Dr. Galowin's written comments for additional information. These comments can be found on EPA's water-efficiency web site at http://www.epa.gov/water/water_efficiency.html.

9. CLOSING REMARKS

Mr. Hanlon wrapped up the meeting by thanking everyone for his or her participation and commitment to this program. He summarized some of the key points made by the panelists including that the time is right for a water-efficiency initiative as demonstrated by the support received from the meeting participants. Mr. Hanlon reiterated participants' concerns about taking a systems approach to water-efficiency labeling and stated that EPA will incorporate these concerns in their deliberations. He also stated that they would rely on the ENERGYSTAR program's experience with market research to make sure it is done correctly. EPA will also consider the recommendations for a fast track certification program and ensuring that industry has sufficient lead-time to deal with the program. Mr. Hanlon solicited additional comments from the meeting participants on formats and topics of future stakeholder meetings and stated that EPA wants to maintain an ongoing dialogue with stakeholders while developing the framework for the program. Finally, Mr. Hanlon expressed his thanks to everyone for making this a successful meeting.